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| APPLICATION NO.                                     | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.     | CONFIRMATION NO.        |  |
|---|-------------|----------------------|-------------------------|-------------------------|--|
| 09/868,699  | 06/20/2001  | Takahisa Aoyama      | L9289.01148             | 3222                    |  |
| 7590 11/02/2004<br>Stevens Davis Miller & Mosher    |             |                      | EXAMINER                |                         |  |
|   |             |                      | UBILES, MARIE C         |                         |  |
| 1615 L Street N W Suite 850<br>Washington, DC 20036 |             |                      | ART UNIT                | PAPER NUMBER            |  |
|   |             |                      | 2642                    |                         |  |
| ,   |             |                      | DATE MAILED: 11/02/2004 | DATE MAILED: 11/02/2004 |  |

Please find below and/or attached an Office communication concerning this application or proceeding.

|  | Application No.   | Applicant(s)   |  |  |  |  |
|--|---|--|--|--|--|--|
| Office Action Occurrence   | 09/868,699  | AOYAMA, TAKAHISA   |  |  |  |  |
| Office Action Summary  | Examiner  | Art Unit   |  |  |  |  |
|  | Marie C. Ubiles   | 2642   |  |  |  |  |
| The MAILING DATE of this communication a<br>Period for Reply   | ppears on the cover sheet w   | rith the correspondence address  |  |  |  |  |
| A SHORTENED STATUTORY PERIOD FOR REF THE MAILING DATE OF THIS COMMUNICATION  - Extensions of time may be available under the provisions of 37 CFR after SIX (6) MONTHS from the mailing date of this communication.  - If the period for reply specified above is less than thirty (30) days, a re - If NO period for reply is specified above, the maximum statutory perion - Failure to reply within the set or extended period for reply will, by state Any reply received by the Office later than three months after the mail - earned patent term adjustment. See 37 CFR 1.704(b). | I. 1.136(a). In no event, however, may a eply within the statutory minimum of thing will apply and will expire SIX (6) MOute, cause the application to become A | reply be timely filed rty (30) days will be considered timely. NTHS from the mailing date of this communication. BANDONED (35 U.S.C. § 133). |  |  |  |  |
| Status   |   |  |  |  |  |  |
| 1) Responsive to communication(s) filed on 20  | June 2001.  |  |  |  |  |  |
| 2a) ☐ This action is <b>FINAL</b> . 2b) ☑ Th   | This action is <b>FINAL</b> . 2b)⊠ This action is non-final.  |  |  |  |  |  |
| 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is   |   |  |  |  |  |  |
| closed in accordance with the practice under   | r <i>Ex parte Quayle</i> , 1935 C.I   | D. 11, 453 O.G. 213.   |  |  |  |  |
| Disposition of Claims  |   |  |  |  |  |  |
| 4) Claim(s) <u>1-9</u> is/are pending in the application.  |   |  |  |  |  |  |
| 4a) Of the above claim(s) is/are withdrawn from consideration.   |   |  |  |  |  |  |
| 5) Claim(s) is/are allowed.  |   |  |  |  |  |  |
| 6)⊠ Claim(s) <u>1-9</u> is/are rejected.   |   |  |  |  |  |  |
| 7) Claim(s) is/are objected to.  |   |  |  |  |  |  |
| 8) Claim(s) are subject to restriction and   | l/or election requirement.  |  |  |  |  |  |
| Application Papers   |   |  |  |  |  |  |
| 9)☐ The specification is objected to by the Exami  | ner.  |  |  |  |  |  |
| 10) ☐ The drawing(s) filed on is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.   |   |  |  |  |  |  |
| Applicant may not request that any objection to the  | ne drawing(s) be held in abeya  | nce. See 37 CFR 1.85(a).   |  |  |  |  |
| Replacement drawing sheet(s) including the corre   | ·   |  |  |  |  |  |
| 11) The oath or declaration is objected to by the  | Examiner. Note the attache  | d Office Action or form PTO-152.   |  |  |  |  |
| Priority under 35 U.S.C. § 119   |   |  |  |  |  |  |
| 12)⊠ Acknowledgment is made of a claim for foreio<br>a)□ All b)⊠ Some * c)□ None of:   | gn priority under 35 U.S.C.   | § 119(a)-(d) or (f).   |  |  |  |  |
| 1. Certified copies of the priority documents have been received.  |   |  |  |  |  |  |
| 2. Certified copies of the priority docume   |   |  |  |  |  |  |
| 3. Copies of the certified copies of the pr  |   | received in this National Stage  |  |  |  |  |
| application from the International Bure  |   | t received   |  |  |  |  |
| * See the attached detailed Office action for a li   | st of the certified copies no   | received.  |  |  |  |  |
| Attachment(s)  |   |  |  |  |  |  |
| 1) Notice of References Cited (PTO-892)  | 4) Interview  | Summary (PTO-413)  |  |  |  |  |
| 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  | Paper No  | (s)/Mail Date  |  |  |  |  |
| <ol> <li>Information Disclosure Statement(s) (PTO-1449 or PTO/SB/0<br/>Paper No(s)/Mail Date <u>6/20/01</u>.</li> </ol>  | 98) 5) \( \bigcirc \text{Notice of} \\ 6) \( \bigcirc \text{Other:} \( \bigcirc  \)   | Informal Patent Application (PTO-152)  |  |  |  |  |
|  | •   |  |  |  |  |  |

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## **DETAILED ACTION**

## Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35
 U.S.C. 102 that form the basis for the rejections under this section made in this
 Office action:

A person shall be entitled to a patent unless -

- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- 2. Claims 1-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Shoki et al. (US 6,087,986).

As for claim 1, Shoki et al. discloses a radio communication apparatus that forms a directivity using an array antenna (or *adaptive array antenna*) composed of a plurality of antenna devices (See Fig. 3, elements 21-24), said radio communication apparatus comprising, a detector (reads for example on "received signal 201" of Fig. 8) detecting null point of a radiation pattern for a communicating party to which a directivity is formed already; an estimator for estimating a direction (reads into "estimation of transmission environment 202A" and "calculation of weight amount" of Fig. 8) where the communicating party exists using the detected null point; and a generator for generating a weight coefficient for a communicating party to which a directivity is not formed yet in accordance with an estimation result (reads into functions performed by "setting of weight amount 203" of Fig. 8). (See also Col. 6, line 60 through Col. 7, line 10).

In regards to the limitations specifying "detecting a null point" and "using the detected null point", both are inherent features of adaptive antenna arrays, such features are used in the suppression of signals jamming (See Col. 1, lines 6-18).

Claims 8-9 are rejected for the same reasons as claim 1.

Claim 2 reads, for example, on the same functions performed by the adaptive antenna array of claim 1, the antenna devices will be receiving a plurality of radiation patterns thus the estimator will be comparing a plurality of received null points (Also see Col. 1, lines 6-18). The limitations in claims 3-6 can be read on the functions performed by the adaptive array antenna as explained on the Background of the Invention, Col. 1, lines 14-37.

As for claim 7, it is well-known in the art, to adjust transmission power on an adaptive array antenna based on a multiplication by a weight vector (or coefficient) of a transmission signal.

## Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Upadhyay et al. (US 6,115,409) teaches an integrated adaptive array system for controlling sources of interferences in CDMA receivers.

Youssefmir et al. (US 6,141,567) teaches an apparatus and method for beamforming in a changing-interface environment.

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Doi et al. (US 6,636,493) teaches an adaptive array having directivity control based on received radio strength.

Hidehiro (Abstract JP 57-20001) teaches a weight control circuit that obtains information on a point in the minimum value direction of a radiation pattern and then generates a weight control signal for generating a new radiation pattern which is null in the direction.

Doi et al. (Abstract JP 2000-082987) teaches a method for controlling directivity of an antenna.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marie C. Ubiles whose telephone number is (703) 305-0684. The examiner can normally be reached on 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ahmad Matar can be reached on (703) 305-4731. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Marie C. Ubiles October 18, 2004.

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